HAWAI‘I UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT

DIVE:674

MISSION STATUS

Location: Penguin Banks, Second Finger, Molokai

Latitude: 21° 01.544 **Longitude:** 157° 21.987

Mission Date: 9/09/06 **Duration:** 6hrs, 2mins

Maximum Depth: 155m

Project Title: The Last Glacial Shoreline at -130m

Principal Investigator: Chip Fletcher

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Observer 1: Terry Kerby
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Observer 2:
Address:

Pilot 1: pit – Steve Price **Pilot 2:** Terry Kerby

Scientific Data Acquired: Prepare an abstract outlining your objectives, techniques, findings, etc.

Objectives:

The objective of this dive is to find and date shoreline features associated with the last glacial maximum, ca. 20,000 yrs BP in order to constrain the age and depth of the ocean level at the last ice age. Anticipated materials for sampling include corals and other carbonate materials that serve as sea-level position indicators known to grow within definable limits of their contemporaneous sea-level position. These might include shallow coral species, beach rock, coralline algae, mollusks, etc. All of these are datable using various techniques. Bathymetric maps of the region indicate the presence of shelves, walls and other large-scale features that are likely to host potential sample targets.

Observations, findings, etc:
We descended onto a rolling carbonate sand bank at -120m depth. Bedforms were 1-2 m in amplitude and ~25m in wavelength. Armoring by rhodolith beds of pea gravel size was widespread. We moved under strong currents toward the east and SE. Following a heading from the ship we moved toward the original target which was a steep embankment. Soon we encountered rocky outcrop and stopped for our first samples.

We sampled several nondescript carbonate outcrops until coming across a fossil reef of in situ and knocked down thick corals the size of my forearm. The outcrop was approx. 10m by 10m and was a framework reef of monospecific branching massive branching coral. Samples at this outcrop were followed by other outcrops along the same -135m contour. We ran across three distinct fossil reefs each a small size but composed of the same monospecific stands of forearm, thick coral branches. We made 15 samples from all sites and in the afternoon current rose, batteries fell and we surfaced.

Observed Species list:
Uncertain, fossil *porites compressa*, or stronger form. 15 samples collected

MISSION EVALUATION:

Limitations, failures, or operational problems noted:
Stiff currents in afternoon. Choice of large bathymetric target successful and many rocky outcrops encountered with many sampling opportunities.

Recommendations for corrective action or improvement:
None

In your opinion, did the mission essentially achieve its purpose? Compare actual work accomplished with the work that was expected to be accomplished.
The mission definitely accomplished its purpose in all respects – very promising samples for dating and paleosea-level analysis collected.

List specimens or samples collected on the mission.
15 branching and massive coral samples.